problems related to the distribution of a load passed through an air-bag provided to lift the feet of the occupant of the vehicle.

If a conventional air-bag is utilised at a position between the floor pan and the carpet of a motor vehicle, if the feet of the occupant are pressed firmly downwardly at the moment that the air-bag is inflated, initially the parts of the air-bag which are not subjected to the downward pressure from the feet will be inflated, and only as a final stage in the inflation of the air-bag will the part of the air-bag located immediately beneath the feet of the occupant be inflated so that the feet are actually lifted up above the floor pan. This is undesirable, since ideally the feet of the occupant should be lifted above the floor pan just as soon as possible when an impact of the vehicle is detected.

The present invention seeks to provide an improved air-bag arrangement.

According to this invention there is provided an air-bag unit adapted to be positioned on the floor pan of a motor vehicle in the foot-well to be located beneath the feet of an occupant of the vehicle, the air-bag unit having a substantially sealed damp-proof housing containing an air-bag, the housing having a substantially rigid upper cover, the unit being such that on inflation of the air-bag the cover of the housing is lifted, from its initial position to an elevated position.

It is to be appreciated that a sealed damp-proof housing will minimise the risk of a fabric air-bag deteriorating even if the air-bag is in a potentially damp environment.

Preferably the housing is provided with mounting means to mount the unit in position.

Conveniently the air-bag comprises two super-imposed layers of fabric, the layers being secured together to define a plurality of discrete cells.

Advantageously the cells comprise a plurality of substantially parallel cells which are substantially cylindrical when inflated.

In an alternative embodiment the cells comprise a plurality of cells configured so that on inflation of the cells one end of each cell has a greater diameter than the other end of the cell. Thus the cells may be substantially triangular.

Preferably the air-bag is provided with a gas supply tube adapted to be connected to a gas generator.

The unit may be provided in combination with a gas generator connected to the gas supply tube, the gas generator being associated with a sensor adapted to respond to an impact.

In an alternative embodiment of the invention a gas generator is provided within the housing to provide gas to inflate the air-bag.

Conveniently electrical connection means are provided to enable mans supplying a signal adapted to initiate inflation of the air-bag to be connected to the gas generator.

In one embodiment the cover of the housing is secured to the base of the housing, the cover being adapted to be separated from the base of the housing on inflation of the air-bag.

Preferably the cover is sonic-welded to the base of the housing.

In an alternative embodiment the cover is secured to a base part of the housing by means of a deformable side wall.

The side wall may be a concertina-style side wall.

Preferably the unit has a substantially rigid base.

In one embodiment of the invention the base has a deformable peripheral region, a terminal lip of the peripheral region being secured to the cover.

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, the invention will now be described, by way of example, with reference to the accompanying drawings in which:

FIGURE 1 is a top plan view, with parts shown in phantom, of an air-bag unit in accordance with the invention,

FIGURE 2 is a cut-away sectional view taken on the line II-II of Figure 1,

FIGURE 3 is a sectional view taken on the line III-III of Figure 1 showing the air-bag in the uninflated state,

FIGURE 4 is a view corresponding to Figure 3 showing the air-bag in an inflated state,